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AUTHOR Millis, Paul J.
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ABSTRACT

This paper discusses how to present new college students with their initial exposure to policy, security, and ethical computing issues. The Office of Policy Development and Education participates in summer orientation to introduce students to proper use of information technology resources at the University of Michigan. This presentation is known as "Smart Computing." Video vignettes were created to highlight key issues for incoming students. This paper examines the creation of the "Smart Computing" presentation. Discussion includes: objectives of the presentation; audience psychology; development of the presentation; adaptation of the presentation; student attitudes and reaction; other venues for presentations; lessons learned; and planning for the next orientation. (AEF)

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'Smart Computing' -- Orienting Your Students

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Paul J. Millis
Education Coordinator
Office of Policy Development & Education
University of Michigan
Ann Arbor
Michigan

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'Smart Computing' -- Orienting Your Students

Paul J. Millis
Education Coordinator
Office of Policy Development & Education
University of Michigan
Ann Arbor
Michigan

Abstract: This paper discusses how to present new students with their initial exposure to policy, security, and ethical computing issues. It includes a discussion of balancing entertainment and content to best reach incoming students as part of a busy orientation program. The paper also addresses how to highlight issues, pick a theme, and select vignettes for the presentation.

'Smart Computing' -- Orienting Your Students

Introduction

The Office of Policy Development and Education participates in summer orientation to properly introduce students to proper use of information technology resources at the University of Michigan. This presentation is know as 'Smart Computing. This year we took a fresh look at how to approach 'Smart Computing'. We created video vignettes to highlight key issues for incoming students. This paper examines the creation of the 'Smart Computing' presentation. It examines the objectives of the presentation and how it was developed and targeted to the audience. It also looks at results.

Objectives

Inform and entertain: It can be a real challenge to get students to see how anything theoretical applies to them, especially in the midst of the tumult that accompanies orientation. We set out to create a presentation on ethical computing issues that was both entertaining and thought provoking.

This year, 'Smart Computing' was developed to address the issues students may be confronted with immediately upon entering the UM information technology environment. The presentation for freshman orientation was designed to teach students things to do to protect their resources, and things not to do (share their password, indiscriminately copy material from the internet, etc). We also attempted to raise awareness of things that may be done to them by hackers, identity thieves or inadvertently by other users.

The review of the orientation evaluations from the prior year revealed some important information related to the 'Smart Computing' segment. Probably the most important thing revealed was that the content was important and that the academic units wanted the material covered. However, it was clear that the way the material was developed and presented needed to be rethought. We needed more student involvement in development. Presenters needed to be more engaging and energetic.

Content-wise we needed to ensure that the presentation was not to frightening or offensive to the staff and students, without sacrificing the chance to talk about important issues.

To meet these concerns, we endeavored to start designing the presentation to make sure that our development

included a feedback loop so the presentation was being looked at on an on-going basis.

It became clear that we would have to go beyond the 'talking heads' of prior years presentations if we were to leave any kind of lasting impression on the audience. It was also clear that our choice of topics and media for presentation were keys if we wanted to reach the target audience.

Provide food for thought: We often use the slogan "Think About It" to unify our campaigns in the Office of Policy Development and Education. That begs the questions 'what' do we want people to think about and 'why'. The 'what' is addressed by decisions made in choosing content:

> Often enamored and fascinated by the power of electronic media and associated tools, faculty developers, students, and other users fail to examine the underlying implications of their actions.

For the 'why' we must look at the role of the university in providing informational technology resources:

> ... we need to be able to foster learning, understanding and higher levels of social cognitive behavior in an environment like a university. This has to be our first commitment. This is not a corporation, not a police state, but a university; a place where we are trying to learn, a place where we are trying to help people understand the implications of their behaviors on themselves and on each other, and where we, as a community, are trying to have an opportunity to speak out about behaviors that are contrary to the values and standards of this community of open discourse.

Publicize the user advocate: Part of our overall strategy in OPDE is to raise consciousness among the students to the functions of the IT User Advocate. The User Advocate is the place where students go for any help solving problems with their use of resources other than being out of money or forgetting their password. We felt that orientation gave us a chance to reassure students that they were not alone since they had an advocate to take their side to protect their rights at U-M. We want students to contact the user advocate when they suspect someone is using their account, when they feel harassed through technology, when they are receiving excessive unsolicited advertising or when they are feeling uncomfortable about activity in their accounts.

Audience Psychology

Orientation - Information Overload: The technology portion of orientation takes place on the second morning of orientation for each group of freshmen. The students are housed apart from their parents and can be depended on to have been up too late the prior night, taking part in parties and other social activities. Hence, we battle fatigue; especially with the first groups of the morning. This timeslot forces us to be cognizant of grabbing and holding the student's attention

Further, on the second morning, students are sent through an introduction to information technology at U-M and three separate technological presentations. Along with 'Smart Computing', the students hear a presentation from Residential Computing and participate in an on-line tutorial which allows them to sign on to their accounts, and be introduced to password security, e-mail and library resources. Hence, the groups we got later in the morning had been barraged with information. We were again made cognizant of the student's ability to comprehend and retain information. Clearly, simpler was better.

It also helped build a connection with the audience when we acknowledged their predicament. Empathizing with the students being out late or being deluged with information helped to focus attention on the presentation through understanding.

Setting expectations: As part of designing the orientation program for this year, we asked ourselves, 'what are we trying to accomplish?'. We decided that we wanted students exposed to key issues related to use of computing resources and understand why these issues relate to them. This prospective can be summarized as follows:

> Those who have never been taught to set boundaries, who don't know how, who are unable to because of the newness of the communication medium, need to have examples and be taught and supported in setting their boundaries verbally and technically.

Level of sophistication: The technical sophistication of our user community is changing all the time. As part of the overall technical education effort, a survey is done of computer use among students. The 1998 version

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of this survey indicated that the availability of technical resources was crucial to 23.9% of our students choosing U-M in 1998, up from 11.7% in the prior year's survey. Almost 80% of the students indicated that information technology resources were a major factor in the decision on where to go to school.

In terms of specific technical resources, survey indicated that nearly 50% of our students read e-mail daily, up from less than 20% two years ago. It also indicated that 88% of our students use the Internet to do research at least on a monthly basis.

Developing the Presentation

In an effort to be more responsive to student concerns, development of the 'Smart Computing' effort was undertaken by a group which included staff from the library, the Office of New Student Programs, ITD and the Office of Policy Development and Education. This team approach was consistent with the approach taken by the entire technology orientation workgroup. The 'Smart Computing' team included a liaison for student concerns working directly with the student orientation leaders in ONSP.

Selection of Media and Approach: In order create a more accessible message for students, we decided to create vignettes on video which could be entertaining as well as springboards for discussion of important issues in the areas of ethics, UM policy and security. We wanted to concentrate on materials that would have an immediate impact on new students. We wished to discuss issues involving technologies all students would need immediately upon joining the U-M community.

Discussion began on a theme that would link the three videos. This discussion commenced with discussion of some link to the Y2K bug. We ended up far from the initial idea because we wanted to make the videos reusable for other educational venues in subsequent years. We ended up with a series of dream sequences; past, present and future. As the 'present-day' sequence developed, we dropped the dream-theme for a more direct approach; using a talk-show motif. The fade showing the passage of time in that video did, however, provide a thematic link to the dream sequences in the other two videos.

Students learn best in the context of a real problem that they need to solve. Hence, we discussed how to make the sessions more interactive, by presenting a scenario, then providing questions and potential answers and allowing students to vote on the potential right answers. This was the presentation model we agreed upon.

Choosing Topics: A number of key issues were explored before deciding what to address in the 'Smart Computing' presentation. We decided to concentrate this year's presentation on three themes.

Password security, use of e-mail (and e-mail groups) and the rules of copyright in cyberspace represented the best tradeoff between messages that the students needed to have early in their careers at U-M and messages that reinforced other ongoing educational campaigns coordinated by OPDE.

Password Security: To address password security, we chose a take-off on the type of 'trash TV' talk shows that have become so pervasive in our popular culture. We attempted to create an amalgam of various talk shows and called it 'Geri Swinger'. Against this backdrop we had the host announce that the topic for 'today's show' is 'people whose lives were changed by technology'. The crux of the vignette is that a student shared his password with his significant other. She used it to gain access to the system. This simple lapse in security led to some pretty serious consequences when she met someone in a chat room. This person harassed the first student, stole his password and generally 'ruined his life'.

Although this vignette is overblown, it is structured to bring out some key issues we deal with on a regular basis. This vignette is used for discussion on sharing passwords, forgetting to log off at campus computing sites, and providing personal information online. The discussion leader emphasized the things that a person can do if they have someone's password.

In addition to these primary issues, the vignette was used, as time permitted, to discuss using the same password for multiple applications, defining a 'secure' password, assessing threats online and safeguarding of personal information.

EMAIL -- Use of EMAIL Groups: To address use of e-mail (especially e-mail groups), we asked ourselves the question, 'what if e-mail was around when the first amendment was being crafted?'. Surely, the founding fathers would have had an e-mail group. The basic premise of the vignette is that a U-M student needs money to buy his girlfriend a birthday present. His roommate suggests that he sell his car to generate funds. While thinking about how to get the car sold, the student falls asleep and dreams that he is James Madison, trying to sell his horse. This dream was suggested by his review of a web-site devoted to colonial newspapers. Upon awakening, the student decides, unwisely, to use his history class e-mail group to sell his car.

The questions that accompany this vignette encourage thinking about the best course of action for the student who wishes to sell his car. We essentially ask the students to decide whether this is a legitimate use of U-M

resources. We also introduce the topics of SPAM and off-topic postings to e-mail groups.

In addition to these primary issues, this vignette was used to discuss responsible use of U-M resources. Specifically, we discussed replying to all, chain letters, making a profit using UM resources and respecting other people's boundaries.

We also touched upon the limitations of e-mail as a communication media, NETIQUETTE and FLAMING for discussion with the group.

Copyright and the Internet: To address password security, we chose to use the image of an overworked student who finds himself all too willing to take shortcuts. Our student is writing a paper on the Y2K Bug, but he is short on time and long on deadlines. Not knowing what else to do, he decides to take a nap. His dream sequence is the bulk of this short video. In his dream, our student is writing a paper on the Y3K bug and physically surfs the internet, on an ironing board, grabbing information with his hands and putting it into his paper. The student then awakens with the mistaken assumption that all he has to do is cut things from the Internet and paste them into his paper, thus he will be 'done in no time'

The primary issues we discuss are how to use the web as a resource in writing a paper, how to cite material from the Web correctly and what is copyrighted on the web.

In addition to these primary issues, the vignette was used to discuss public domain material, availability through the undergraduate library of reference material on citation rules, how to obtain permission for use of copyrighted material and the need to respect intellectual property. We also pointed up the copyright problems with music downloaded from MP3 sites.

Other Messages: We closed the session by highlighting the resources available to understand policy on UM's campus. We also re-iterated that the User Advocate is available to protect their rights if they feel harassed, suspect that someone is using their accounts, are getting chain letter (or excessive SPAM) or need advice

Selecting Handouts and Documentation: In order to complement the verbal messages being given the students, we wished to provide them with reference materials related to the issues being addressed. We looked to three basis sources for such material:

Existing Brochures: OPDE has an extensive collection of guidance material on issues of policy security, and ethics. From those, we chose the following:

Proper Use Policy: Students sign this policy as a condition of getting access to U-M's information technology resources. We felt that students should have a written copy of the policy, since they may not have had an opportunity to read it in any depth before getting their password and ID.

Proper Use Guidelines: We provided students with these guidelines to amplify what is in the proper use policy. This handout gives the student some more concrete advice as to what they can and can't do with their accounts

IT User Advocates Bookmark: One of our explicit goals for orientation was to raise consciousness in the community of User Advocate services. We also felt that knowing that there were people on campus who would safeguard their rights would help students decrease their level of fear when it came to exposure caused them by other's misuse of technology resources.

Password Security: The orientations tutorial gives people a chance to experience changing their passwords. Since the students were being taught how to change their passwords, we felt we should discuss how often to change passwords and show them how to set a password that is difficult to crack. That is the purpose of this handout.

Creative Adaptation: We have created a number of handouts as part of training we have done in the past. Often, all that is needed is to update this material. Such was the case with our e-mail *netiquette* handout.

EMAIL Etiquette at UM: We have found our *netiquette* material to be well received in other classes. For orientation, we used it to address the psychology of e-mail, schemes for adding emotional context to e-mail, and how to sound elegant in e-mail by knowing the correct acronyms.

The handout itself needed to be updated due to the relative sophistication of our users. When the handout was originally developed, the *emoticons* (i.e. smiley faces) were a relatively new phenomenon. We updated the emoticon presentation to include more subtle and sophisticated faces used today.

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We also updated the e-mail acronyms (e.g. F2F = Face to Face) to include more sophisticated phrases, along with the simplistic ones that have been around for 30 years.

Finally, we provided an updated list of defined computing terms.

A Visual: We wanted our orientation presentation to have a visual identity. We felt this would make the presentation memorable in the minds of the student and also help tie together the three presentations and give them identity as a group.

Think about it: For our visual, we chose to include one of a series of stylized faces we have used in the past for policy and ethics campaigns. Each student packet included one of the four of these stylized faces. We felt that this visual said to the student, "stop – think about this – it effects everybody". We also used the handout as a touchstone to reassure students that we knew they wouldn't retain much of the material presented to them during the day. However, we felt that a proper grounding in ethics could provide them a basis for judging how to approach situations, even those they had not previously encountered, because they would not have to remember a specific rule to be able to make the proper response.

Suggestions: In an effort to help students how to deal with real problems they are likely to encounter, the areas represented by the development team were queried to see what actual problems needed to be specifically addressed. Additionally, through the summer, the program was reviewed and modified to include information on newly identified areas of concern and better ways of reaching the students. It was noted that the students were being asked to sign a document agreeing to the stipulations of the "Proper Use Policy" at U-M. It became clear that the students had not always had the time or inclination to read the policy before signing. So, we adapted the 'Smart Computing' presentation to include a brief synopsis of what the students were agreeing to. Granted, this is a gross simplification of the 'fair use' policy. However, this simplified presentation gave students had a feel for what they were agreeing to.

We also tried various ways to make the presentation more immediately relevant to students. Pointing out that they were signing an agreement promising to use resources properly seemed to get their attention. So did using live examples of those things that can happen to the community as a result of compromising security at the individuals level. We spoke specifically of a racial hate-mail incident at another university and a recent computer-hacking incident at U-M to bring home the point relating to the importance of passwords and computer security.

The Presentation Evolves

Changes over time: Our first inclination was to present the vignettes in a 'case-study' format. We planned the seating for the sessions with five students sitting around each of eight tables. We planned to show the video, present questions and possible options and then give the students a couple minutes to discuss the issue and come to a consensus at each table. Upon reaching consensus, each table was instructed to hold up a specially designed puzzle piece (in accordance with the overall orientation theme).

We quickly found two problems with this scenario. First, it took too long for a twenty-minute presentation. Secondly, the students sitting around each table generally didn't know each other. Given the stress of this social situation, there was very little discussion. So, we adapted the presentation so that each student voted individually.

Stories from the Front

They don't believe it yet: The library people who had done the orientation program before had alerted us, that the attitude of the students would evolve over the summer. This was particularly striking and showed how fast students develop at their particular level of maturity. The first students of the summer were three weeks from being high school seniors and exhibited the requisite bravado. As the summer wore on, the students took the orientation programs more and more seriously. It became clear to the students they were about to face an entirely new environment and they better prepare themselves. To be fair, two other factors effected this metamorphosis. These factors were characteristics of the groups that changed over the summer. Early in the summer, large regional high schools send groups of students who know each other together on the same days. This familiarity effects the dynamics of the groups. Secondly, the students who came later in the summer tended to have been less sure of the having the resources to attend U-M. Their attendance indicates that they have been able to get everything worked out, but they seemed to be more serious.

Why might these trends be important? If they were reasonably reliable, they would also effect how the 'Smart Computing' presentation should evolve over the orientation period. If the groups change over the summer, the early students may not be reliable predictors of how the presentation would be received over the entire period.

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Too cool for school: Another striking characteristic of the groups was the level of peer consciousness that we saw in the groups. This was especially true in the early groups where a lot of people knew each other. Essentially, material we had tested with student groups, like the orientation leaders, and knew to be humorous could get a great range of reactions, depending on the group. If one person laughed; everybody laughed. There was a great deal of pressure within the groups to conform.

The major effect this had on the presentation, as discussed above, was a rethinking of the expectation that the groups would engage in meaningful dialogue prior to answering questions.

'Cheesy' is in the eyes of the beholder: Empathy with the audience went a long way to making the presentation a success. One way we found to develop empathy was to assure the audience that the videos were too 'cheesy' for a sophisticated group, like our orientation classes. Clearly, at one level this was true. The students, as a group, are very sophisticated, especially technically and the videos are not done by professional actors and are very simple productions. At another level saying to the students that, 'you are handling this orientation in a very sophisticated manner', helped develop camaraderie between the presenters and the audience. It also gave them implicit permission to kick back and enjoy the inherent goofiness of the presentation. If they were willing to take the material at face value and focus their attention, we would be able to leave an impression on the students.

Distractions: In a very real sense, the students were as sophisticated as we told them they were. Our biggest issue is the time slot in the second morning. We ended up with a certain percentage of students too tired to pay attention. But that wasn't very distracting. The questions we were asked indicated that the level of the material was not overwhelming. The questions were well thought out and flowed naturally from the material. As the summer wore on we wove more and more of the common questions into the fabric of the presentation itself.

Attention span: We found that shorter, simpler presentations worked better. The need to have shorter, more direct messages was a product of the students being overloaded with information during the orientation period. We re-edited the videos once to shorten them and punch them up. This cut the time on the videos by half a minute.

Other Venues

Graduate Orientations: Along with undergraduate orientations, we participated by doing live presentations at the Law School, the Medical School and the College of Art and Architecture. We tailored specific presentations for each of these environments. We worked with the chief information technology person at each of these colleges to make the presentation relevant to their students. The time we were allocated and the issues each school wished to emphasize determined how we approached each orientation session.

Each of chiefs of information technology had different opinions on which of the videos were appropriate for their student groups. We addressed password security with each group. Hence, we showed them all the 'Geri Swinger' video.

Since we had only 10 minutes with each Medical School group, we addressed password security; discussing social engineering aspects, how to set a password that was hard to guess, and how to combat scanning.

We had 30 minutes with the Law Students. We only showed 'Geri Swinger' video, but we discussed all of the key issues. We talked about e-mail usage (and groups) and copyright. This presentation addressed the legal environment for e-mail (including privacy rights) and copyright (focusing on the Digital Millennium Copyright Act and Fair Use provisions).

With Art & Architecture, we were given a 45-minute time slot. This allowed us to show all three videos and address some things in greater depth. We expanded the presentation to include more detail on First Amendment Rights and the theoretical basis for U-M's policy of not monitoring e-mail. Additionally, we addressed 'Fair Use' provisions with the Graduate Students, as well as how to protect their own work. Both of these topics were deemed too complex to address in the 20 minute undergraduate presentation.

Transfer & International Students: Along with live summer orientation presentations, we were asked to provide information packets for an additional 1600 graduate and transfer students. Even though we were not able to speak to these groups, we were able to get our message out to another significant piece of the community.

Parents Orientation: We were also able to give a small group of parents a chance to sample the videos and briefly discuss 'Smart Computing'. The parents were a receptive audience.

Lessons Learned

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Snappier, punchier, shorter: The technique of overlaying text on the videos to help set the scene and bring out key issues will need to be further exploited in the future. It simplifies presentation immensely and makes the video messages more accessible. Further, the aim for future productions will be a maximum of 3 minutes. We will further concentrate harder on the main message and not muddy the water with setup.

Check the humor: One of the most interesting things that we learned from this year's orientation was to make sure to check that the humor translates to today's college students. In the "Founding Fathers" video, we include a joke about *the old gray mare not being what she used to be*. This was a reference to the old folk song "The Old Gray Mare". When writing the script, we assumed that the song was part of the popular culture. We previewed the videos with groups of staff people and the overwhelming majority got the joke. During the summer we showed the videos to 5200 students and not one did. In the future we need to see that the assumptions made on what is humorous need to be checked. The student reviewers were asked if they understood the script – which they did. But, the right question was "do you get the joke?"

Use catch phrases: One of the biggest lessons learned was that creating the vignettes went a long way toward leaving a lasting impression on the students. We do however need to do a better job of creating a simple, direct message which can be conveyed in a simple catch phrase that students can carry with them from the presentations to remember the concepts presented.

Planning for the Next Orientation

New issues: In the areas of security, policy and ethics, there are a number of key issues we want to address. As part of our educational efforts, we are attempting to create new video vignettes on different topics. We are planning to address internet hoaxes, providing personal information online, fair information practices and accessing pornography in this manner. We are hopeful that the lighter touch used on this year's videos can be extended to the new topics. It is our hope that we can provide guidance to users on serious topics without overly frightening our users or discouraging them from ethical use of technology.

Conclusions

We feel that we made a lot of progress with the "Smart Computing" presentation in 1999. We moved to a more interactive presentation style. The videos were a success and it is our intent to continue creating vignettes in that media. They are especially useful because they can be reused and repackaged for other educational venues. We did a better job of capturing attention than previous years and we were able to leave a lasting impression on are audience, evidenced by an article in the *Michigan Daily* three months later which referred to our part of the orientation as a shared experience.

We also learned that there are a lot of things that we can get better at. The key to these is student involvement in everything from writing scripts and testing the humor to more carefully tailoring the message to the learning styles and preference of today's students. We learned that if you can make the messages fit the learning styles of the audience, they will care, they will participate and they will remember the important parts.

Endnotes

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